AMENDMENT TO THE CLAIMS

A complete list of all the presently or formerly pending claims in the application is provided below, with suitable headings to show the status of each claim.

Claims 1-6 (cancelled)

7. (Cancelled)

8. (Cancelled)

9. (Cancelled)

10. (Cancelled)

11. (Cancelled)

12. (Original) An electromagnetic tracking system comprising

a magnetic field generating unit driven by a drive signal,

a field sensing unit having a sensing signal responsive to a changing magnetic field, said changing magnetic field including a position-dependent field produced by said magnetic field generating unit,

the generating and sensing units being arranged to generate and to sense, respectively, an electromagnetic field in an arena of interest, and wherein at least one of said units is movable,

signal measurement and conditioning circuitry connected to said units to sample and digitize signal data for the field generating and field sensing units,

a distorter having a known structure disposed at a selected location in the arena of interest, and

a processor operative on the sampled and digitized signal data to determine relative coordinates and orientations of said field generating or field sensing unit, said processor modeling the distorter and the generating and sensing units to generate modeled signal data and

fitting said modeled signal data to measured signal values to determine coordinates and orientations of said field generating and field sensing units.

13. (Cancelled)

14. (Cancelled)

15. (Cancelled)

16. (Cancelled)

17. (Cancelled)

18. (Cancelled)

19. (Cancelled)

20. (Previously presented) The electromagnetic tracking system of claim 12, wherein said distorter comprises a shielding device positioned in relation to a fluoroscopic detector.

21. (Cancelled)

22. (Previously presented) The electromagnetic tracking system of claim 12, wherein said processor uses an integral method of correction to compensate for distortion caused by said distorter.

23. (New) The electromagnetic tracking system of claim 12, wherein said field sensing unit is movable within the arena of interest.

24. (New) An electromagnetic tracking system comprising

a magnetic field generating unit driven by a drive signal,

a field sensing unit having a sensing signal responsive to a changing magnetic field, said changing magnetic field including a position-dependent field produced by said magnetic field generating unit,

the generating and sensing units being arranged to generate and to sense, respectively, an electromagnetic field in an arena of interest, and wherein at least one of said units is movable,

signal measurement and conditioning circuitry connected to said units to sample and digitize signal data for the field generating and field sensing units,

a distorter having a known structure disposed at a selected location in the arena of interest, and

a processor operative on the sampled and digitized signal data to determine relative coordinates and orientations of said field generating or field sensing unit, said processor modeling the distorter and the generating and sensing units to generate modeled signal data and fitting said modeled signal data to measured signal values to determine coordinates and orientations of said field generating and field sensing units, said processor modeling said distorter as a ring model.

25. (New) An electromagnetic tracking system comprising

a magnetic field generating unit,

a field sensing unit,

the generating and sensing units being arranged to generate and to sense, respectively, an electromagnetic field in an arena of interest,

a distorter having a known structure disposed at a selected location in the arena of interest, and

a processor modeling the distorter as a ring model.

26. (New) The electromagnetic tracking system of claim 25, wherein the field sensing unit has a sensing signal responsive to a changing magnetic field, said changing magnetic field including a position-dependent field produced by said magnetic field generating unit.

27. (New) The electromagnetic tracking system of claim 25, further comprising signal measurement and conditioning circuitry connected to said units to sample and digitize signal data for the field generating and field sensing units.

28. (New) The electromagnetic tracking system of claim 25, wherein said processor models the generating and sensing units to generate modeled signal data and fitting said modeled signal data to measured signal values to determine coordinates and orientations of said field generating and field sensing unit.

29. (New) The electromagnetic tracking system of claim 25, wherein at least one of said units is movable.

30. (New) The electromagnetic tracking system of claim 25, wherein said distorter comprises a shielding device positioned in relation to a fluoroscopic detector.

31. (New) The electromagnetic tracking system of claim 25, wherein said processor uses an integral method of correction to compensate for distortion caused by said distorter.